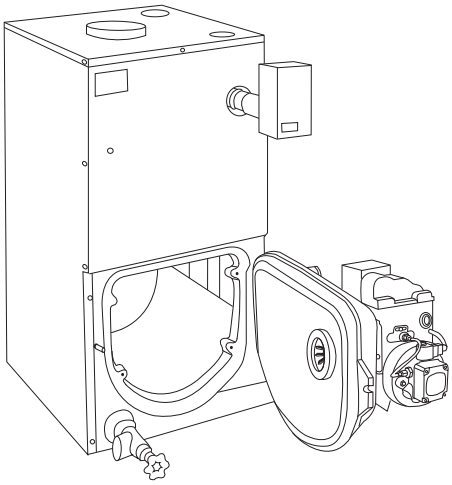
Product Data



A02217

Fig. 1 - Model BW4/BW5

Select Models

Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to www.ahridirectory.org.

The modern design and attractive appearance of the models BW4 and BW5 Oil-Fired Water Boilers make them ideal for installation in any area. The boilers are shipped fully assembled and wired, including all controls except barometric regulator and circulator pump. The compact 22-gauge steel cabinet has a baked-on enamel paint finish for durability. A 1-in. layer of thermal insulation is applied inside the jacket for protection and thermal efficiency. The flame retention head burner provides efficient fuel usage. A wet base cast iron block with thermal pins surrounds the combustion area for better heat transfer from flue gases to water.

FEATURES

RANGE OF CAPACITIES — BW4 and BW5 boilers are available in sizes 91,000 to 245,000 BTUH. An additional nozzle is included to fire the boiler at the next lowest input. Low-fire accessory kits are required to fire the boilers with Beckett burners at the 91,000 and 126,000 BTUH input rate.

2012 DOE COMPLIANT — The BW4/BW5 oil-fired boilers meet all 2012 Department of Energy (DoE) requirements for these products.

BAROMETRIC DRAFT CONTROL — The factory-supplied barometric draft control can easily be installed in the vent pipe for optimum draft and combustion efficiency.

CONTROLS — Factory-wired controls on units with tankless hot water coil include a triple aquastat relay with high/low limit protection and circulator control. A factory accessory kit is available for protection against low water operation which is required by code.

COMBINATION TRANSFORMER AQUASTAT — A 24-v transformer is combined with the aquastat assembly. The transformer will supply power efficient to power a 3-zone system on BW5 models. These units also feature a factory-installed combination pressure/ temperature gauge and a pressure relief valve.

COIL OPTIONS — Units are available with or without tankless heater coil. The coil provides a supply of hot water for normal domestic purposes or an accessory tankless heater coil can be added later.

FACTORY INSTALLED FEATURES — A factory-installed drain is provided should the boiler ever need to be drained. Oil primary control prevents boiler operation in the event of flame loss.

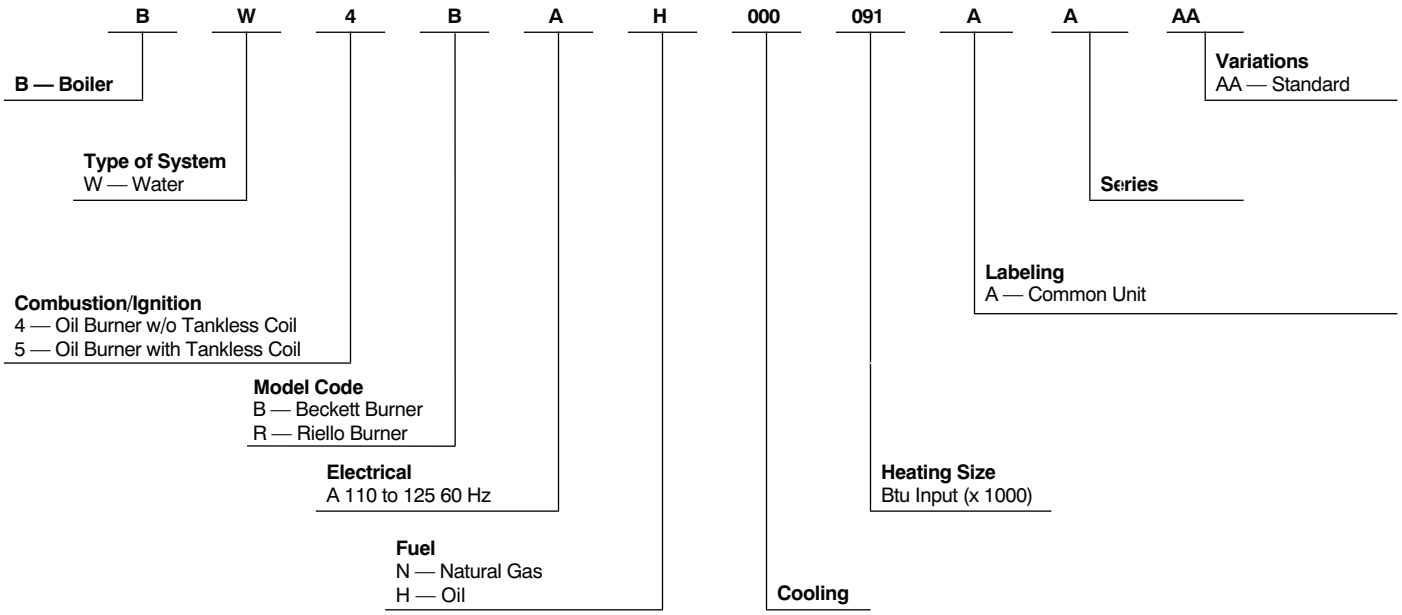
SECTIONS TESTED — Each section is hydrostatically tested to 50 psig. Individual sections are tested to 125 psig at factory. Assembled sections are tested to 75 psig at the factory. The maximum allowable pressure is 50 psig for hot water boilers.

EASE OF INSTALLATION — Circulator is shipped pre-wired with 6 ft BX conduit for easy installation for supply-side pumping.

SOLENOID OIL VALVE — This provides cleaner burning and quieter operation. Valve is included on all burner types.

SWING BURNER DOOR — This unique design offers uninhibited access for set-ups, service, and maintaining the burner. Routine cleaning is also much easier.

MODEL NUMBER NOMENCLATURE



A12526

ACCESSORIES

DESCRIPTION	PART NO.
Filltrol Package (up to 150,000 BTUH) (Includes Air Purge Extrol Tank and Fill Valve)	KBAFP0201DNK
Filltrol Package (over 150,000 BTUH input) (Includes Air Purge Extrol Tank and Fill Valve)	KBAFP0301DNK
High–Limit Control*	KBAHL0101DNK
Tankless Water Heater Kit	KBATH0101DNK
Combustible Floor Base, 24'' x 30''	KBASB0301DNK
Low Water Cut–off Kit	KBALW0101DNK
Low Fire Re–Rate Kit (Beckett – 3 section 91,000 Btuh Input BW4B/BW5B)	KBALF0301DNK
Low Fire Re–Rate Kit (Beckett – 3 section 105,000 Btuh Input BW4B/BW5B)	KBALF0401DNK
Re–Rate Kit (Beckett – 3 section 140,000 Btuh Input BW4B/BW5B)	KBALF0501DNK
Low Fire Re–Rate Kit (Beckett – 4 section 126,000 Btuh Input BW4B/BW5B)	KBALF0601DNK
Low Fire Re–Rate Kit (Beckett – 4 section 175,000 Btuh Input BW4B/BW5B)	KBALF0701DNK
Re–Rate Kit (Beckett – 4 section 210,000 Btuh Input BW4B/BW5B)	KBALF0801DNK
Low Fire Re–Rate Kit (Beckett – 5 section 168,000 Btuh Input BW4B/BW5B)	KBALF0901DNK
Re–Rate Kit (Beckett – 5 section 210,000 Btuh Input BW4B/BW5B)	KBALF0901DNK
Low Fire Re–Rate Kit (Riello – 3 section 91–140,000 Btuh Input BW4R/BW5R)	KBALF1001DNK
Low Fire Re–Rate Kit (Riello – 4 section 126–210,000 Btuh Input BW4R/BW5R)	KBALF1101DNK
Low Fire Re–Rate Kit (Riello – 5 section 168–245,000 Btuh Input BW4R/BW5R)	KBALF1201DNK

*Accessory High Limit Control is a strap–on aquastat used as an auxiliary limit or reverse acting circulator control.

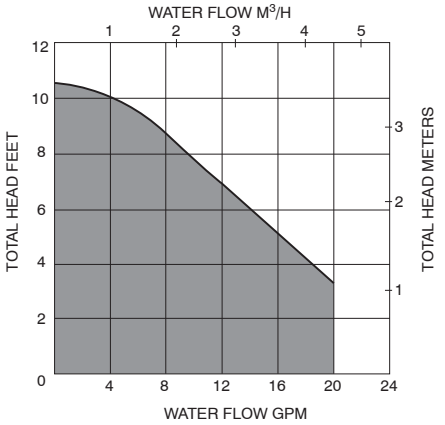


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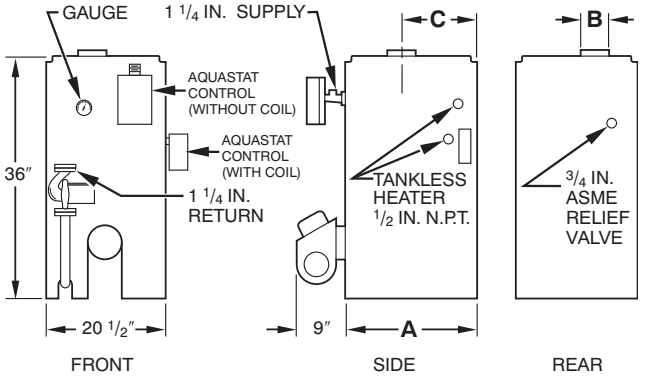
Fig. 2 - Water Boiler Circulator Curve



A06591

Fig. 3 - Models BW4 and BW5 Dimensions

DIMENSIONS (IN.)

UNIT SIZE	A	B	C
140	14.5	6	8
210	17–3/4	6	9–5/8
280	21	6	11–1/2

CLEARANCES - IN. (MM)

PART OF BOILER	COMBUSTIBLE
RIGHT SIDE	6* (152)
LEFT SIDE	24 (610)
TOP	6† (152)
BACK	6 (152)
FRONT	18† (457)
FLUE	18 (457)

* Clearance 18 in. (457 mm) tankless heater for BW5.

† Service clearance requirement 24 in. (610 mm)

BECKETT OIL BURNER SPECIFICATIONS - BW4B/BW5B

BASE MODEL	BOILER INPUT (BTUH)	DELEVAN OIL NOZZLE	FIRING RATE (GPM)	HEAD–ADJ. OR SETTING	LOW FIRE BAFFLE*	AIR SHUTTER / BAND	STATIC PLATE (IN.)	PUMP PRESSURE (PSIG)	BURNER MODEL
140	91,000‡	0.50–80°B	0.65	F0 1–1/8	Yes	10 / 0	3–5/8	175 psig†	AFG F–Head
	105,000‡	0.65–70°B	0.75	F3 1–1/8	Yes	10 / 0	3–1/2	140 psig	AFG F–Head
	140,000	0.85–70°B	1.00	F3 1–1/8	No	10 / 2	3–1/2	140 psig	AFG F–Head
210	126,000‡	0.75–80°A	0.90	F3 1–1/8	No	8 / 0	3–1/2	140 psig	AFG F–Head
	175,000‡	1.00–80°A	1.25	F6 1–1/8	No	10 / 0	3–3/8	140 psig	AFG F–Head
	210,000	1.25–80°A	1.50	F6 1–1/8	No	10 / 2	3–3/8	140 psig	AFG F–Head
245	168,000‡	1.00–60°B	1.20	V1–0	No	10 / 1.5	2–3/4	140 psig	AFG 50 MD
	245,000	1.50–45°B	1.75	V1–2	No	10 / 4	2–3/4	140 psig	AFG 50 MD

* Low Fire Baffle included in loose parts bag, shipped with boiler.

† Pump is factory set at 140 psig. Raise pump pressure to 175 psig after installing accessory Low Fire Kit for 91,000 BTUH input.

‡ Accessory Low Fire Kit required. Refer to Accessory Section and Performance Data Table.

RIELLO OIL BURNER SPECIFICATIONS - BW4R/BW5R

BASE MODEL	BOILER INPUT (BTUH)	DELEVAN OIL NOZZLE	FIRING RATE (GPM)	TURBULATOR/AIR SHUTTER SETTING	PUMP PRESSURE (PSIG)*	BURNER MODEL
140	91,000‡	0.50–70°W	0.65	0.5 / 2.0	155	F–5
	105,000‡	0.65–70°W	0.75	2.0 / 2.2	150	F–5
	140,000	0.85–70°W	1.00	2.0 / 3.2	170	F–5
210	126,000‡	0.75–70°W	0.90	1.5 / 2.6	160	F–5
	175,000‡	1.00–70°W	1.25	2.5 / 3.8	170	F–5
	210,000	1.25–70°W	1.50	4.0 / 7.0	175	F–5
245	168,000‡	1.00–70°W	1.20	2.5 / 3.5	150	F–5
	245,000	1.50–70°W	1.75	2.0 / 3.8	155	F–10

* All Riello 40 F5 and F10 oil burners are factory preset at 145 psig.

‡ Accessory Low Fire Kit required. Refer to Accessory Section and Performance Data Table.

ELECTRICAL DATA

ALL MODELS	
Voltage—Hertz—Phase	115 — 60 — 1
Minimum Branch Circuit Wire Size (AWG)	14
Maximum Fuse Size (Amps)	15
Control Circuit Power Available	40va–@ 24v

RATINGS AND PERFORMANCE

WITHOUT TANKLESS COIL	NO. SEC.	INPUT MBH*	HEATING CAPACITY† MBH*	NET I=B=R RATING MBH*	FIRING RATE GPH‡	AFUE %	ENERGY STAR	BOILER WATER CAPACITY	SHIP WGT. LB.
BW4BAH140 BW4RAH140	3	91	80	70	0.65	86.3	✓	7.6	460
	3	105	92	80	0.75	85.2	✓	7.6	460
	3	140	119	103	1.00	84.0		7.6	460
BW4BAH210 BW4RAH210	4	126	111	97	0.90	86.0	✓	11.6	533
	4	175	150	130	1.25	85.0		11.6	533
	4	210	178	155	1.50	84.0		11.6	533
BW4BAH245 BW4RAH245	5	168	147	128	1.20	86.5	✓	13.7	620
	5	245	209	182	1.75	84.3		13.7	620

– Shaded areas are as shipped. Alternate inputs require a field–installed Accessory Low Fire Kit.

* MBH = 1,000 BTU per hour / BTU = British Thermal Unit

† Heating Capacity is based on a 13 percent CO2 with a –0.02 in. wc draft over fire and a #1 smoke or less. Testing was done in accordance with the D.O.E (Department of Energy) test procedure.

‡ GPH = Gallons per hour of oil at 140,000 BTU per gallon

RATINGS AND PERFORMANCE

WITH TANKLESS COIL	NO. SEC.	INPUT MBH*	HEATING CAPACITY† MBH*	NET I=B=R RATING MBH*	FIRING RATE GPH‡	AFUE%	ENERGY STAR	BOILER WATER CAPACITY	SHIP WGT. LB.	TANKLESS HEATER G.P.M.††
BW5BAH140 BW5RAH140	3	91	80	70	0.65	86.3	✓	7.6	470	2.90
	3	105	92	80	0.75	85.2	✓	7.6	470	3.00
	3	140	119	103	1.00	84.0		7.6	470	3.25
BW5BAH210 BW5RAH210	4	126	111	97	0.90	86.0	✓	11.6	545	3.15
	4	175	150	130	1.25	85.0		11.6	545	3.50
	4	210	178	155	1.50	84.0		11.6	545	3.75
BW5BAH245 BW5RAH245	5	168	147	128	1.20	86.5	✓	13.7	630	3.45
	5	245	209	182	1.75	84.3		13.7	630	4.00

– Shaded areas are as shipped. Alternate inputs require a field–installed Accessory Low Fire Kit.

* MBH = 1,000 BTU per hour / BTU = British Thermal Unit

† Heating Capacity is based on a 13 percent CO2 with a –0.02 in. wc draft over fire and a #1 smoke or less. Testing was done in accordance with the D.O.E (Department of Energy) test procedure.

‡ GPH = Gallons per hour of oil at 140,000 BTU per gallon

†† GPM = Gallons of water per minute, heated from 40° F to 140° F, with 200° F boiler water temperature, intermittent draw.

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Catalog No: SS–BW4–01

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Replaces: PDSBW4R–91.1, BW4R–1PD